

PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPEAL BRIEF FILED UNDER 37 CFR 1.192

April 24, 2003

BY COURIER

Assistant Commissioner for Patents
Washington, D.C., U.S.A. 20231

Dear Sir:

RE: Patent Application No. 09/769,405
Filing Date: January 26, 2001
Inventor: Arthur W. Lauder
Title: Rod Coupling
Group Art Unit: 3679
Examiner: J.R. Schiffman
Attorney Docket No. 143-3

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1. INTRODUCTION

This is an appeal to the Board of Appeals and Interferences from the decision dated October 29, 2002, of the Examiner finally rejecting claims 1-12.

2. REAL PARTY IN INTEREST

The invention has been assigned to Plainsman Mfg. Inc. of Edmonton, Alberta, Canada, which is the real party in interest.

3. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

4. STATUS OF CLAIMS

Claims 1-12 have been finally rejected, and it is this final rejection that is being appealed.

5. STATUS OF AMENDMENTS

There are no amendments pending in this appeal.

6. SUMMARY OF INVENTION

As set out in the claims, the invention is directed to a rod coupling, comprising:
a tubular housing having a first end adapted for threaded connection to a rod in a downhole rod string and a second end adapted for threaded connection to a rod in a downhole rod string, the

tubular housing having an interior surface defining a bore extending along the tubular housing from the first end to the second end, the tubular housing having an exterior surface (page 2, line 25- page 3, line 2);

plural openings extending transversely through the housing from the interior surface to the exterior surface (page 3, lines 3-6, lines 13-20); and

a coating on the exterior surface of the tubular housing and covering the plural openings (page 3, lines 8-12).

The Applicant submits that the coating as applied by the Applicant's invention represents an improvement over the prior art that relied on various methods of modifying the exterior surface only of the rod coupling.

The invention also provides for a drill string made up of a plurality of sucker rods joined by a plurality of rod couplings as shown in the Applicant's disclosure (page 3, lines 24-29).

7. GROUPING OF CLAIMS

The following groups of claims are argued separately: Claims 1, 2 and 4-11 and Claims 3 and 12. The feature of claims 3 and 12 that the coating extends through the openings to form knobs is argued separately.

8. THE REFERENCES

The following references are relied on by the Examiner:

Edge	US 272,033	Feb. 13, 1883
Silva	US 4,168,393	Sep. 18, 1979
Bair	US 4,668,117	May 26, 1987

9. BRIEF DESCRIPTION OF THE REFERENCES

Edge is directed to a method of inlaid work whereby a perforated plate is mounted on top of another plate, preferably of some plastic material, and then both parts are exposed to a die that forces material from the lower plate through the perforations of the upper plate. Depending on the degree of force applied, knobs may form on the surface of the upper plate. Depending on the desired effect, these knobs may be filed down flush with the surface of the upper plate.

Silva "relates generally to electrical connectors and pertains, more specifically, to a method and means for substantially permanently retaining in a desired position the enfolded portion of a sleeve-like insert utilized as internal shielding structure in a high voltage electrical connector" (Col. 1, lines 8-13), and it is directed as its primary object "to provide a sleeve-like folded insert of conductive elastomeric material, of a type for use within electrical connectors, having an enfolded portion substantially permanently retained in its intended position" (Col. 1, lines 48-53). Silva was seeking to solve the problem of keeping the folded-under ends of the insert permanently in place without the use of adhesives or mechanical fasteners (Col. 1, lines 61-65) so that they do not move or come free "during any subsequent phase of development (such as molding a conductive outer jacket about composite housing 10) as well as during any phase of actual operation or use of a connector embodying the composite housing 10" (Col. 5, lines 30-34). This disclosure did not disclose a problem of adhesion between the insulating outer jacket 14 and the insert 12.

Bair teaches a rod coupling with a mounted guide, the rod guide comprising "(a) an axially elongated coupling section having threads at axially opposite ends thereof for coupling to and

between successive sucker rods in the string, to transmit string loading, (b) a rod guide extending about and bonded to said section to project outwardly therefrom, for engagement with the well bore during up and down stroking of the string" (Col.1, lines 33-41). The guide itself "may consist of molded plastic material... such plastic most preferably consist[s] of urethane or polyurethane" (Col. 1, lines 45-50). The guide is connected to the coupling section by means of at least one tongue and groove connection, and typically two at opposite ends of the guide (Col. 2, lines 40-44). The major object of the invention is to meet the need "for guides which are easily and quickly removed and replaced, and which do not become detached from the string during the most adverse stroking conditions, as for example when the well deviates radically from vertical" (Col. 1, lines 21-25).

10. THE REJECTION

All the claims stand rejected under 35 U.S.C. 103(a) as being unpatentable over Silva in view of either Bair or Edge. The Examiner suggests that Silva, as combined with either Bair or Edge, renders the Applicant's invention obvious to one of ordinary skill in the art. According to the Examiner, Silva discloses "a rod coupling comprising a tubular housing 12 having a first end and a second end, the tubular housing having an interior surface 16 defining a bore extending along the tubular housing from the first box end to the second box end, the tubular housing having an exterior surface 48, plural openings 52 extending transversely through the housing from the interior surface to the exterior surface, and a coating 14 (col. 2, l. 52-53) on the exterior surface of the tubular housing and covering the plural openings" (page 2, Paper 7). The Examiner combines this

characterization of Silva's invention with Bair to reject claims 1, 2, and 4-11, and further with Edge to reject claims 3 and 12.

The Applicant submits that the Examiner's characterization of Silva is completely wrong, that the combination of Silva with either reference is also utterly lacking in motivation, and that as such the Examiner has failed to make out a *prima facie* case of obviousness.

11. ARGUMENT

It is submitted that the Examiner's rejection of the invention, based on the combination of features from different references, is in error, and arises from a misunderstanding of both the invention and the prior art. The Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy. . .

To determine obviousness, therefore, the Examiner must consider four key elements outlined by the Supreme Court in its decision, and summarized in *The Manual of Patent Examining Procedure (MPEP) Edition 8 (E8), August, 2001*, s. 2141. They are as follows:

- (A) Determining the scope and contents of the prior art;
- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations.

It will be argued and demonstrated that the Examiner has failed to determine correctly the scope and contents of the prior art and also to assess properly the differences between the references and the claimed invention, and therefore has come to an erroneous rejection of the claims under 35 U.S.C. 103(a).

It is respectfully submitted that the Examiner has misread the Silva patent and attributed to it features that it does not have. If the Examiner had truly understood the prior art, he would have recognized that the references cited teach away from each other, and, consequently, away from the combination of features claimed by the appellant. As such, the Examiner has failed to establish a *prima facie* case of obviousness where the requirements, as set out in *MPEP*, s. 2143 are as follows:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

Because of this failure, the rejection of the claims must be set aside.

I. The Examiner Erroneously Relies on the Silva Patent

Perhaps the most fundamental problem with the Examiner's rejection is his reliance on the Silva patent at all. The Examiner makes three assertions that demonstrate a mistaken characterization of the Silva patent, as well as its applicability to the Applicant's invention. The first assertion is that "it is known that rod couplings and cable couplings are analogous" (page 4, Paper 7). The second assertion is that "according to U.S. practice, patentability relies primarily on structure over function" (page 4, Paper 7). Finally, the Examiner states that "an argument for non-analogous art under section 103 applies only between the references used in the rejection, not to one reference compared to applicant's invention" (page 5, Paper 7). The Applicant will address each of these assertions in turn to demonstrate the Examiner's error in relying on Silva.

A. "...it is known that rod couplings and cable couplings are analogous"

The Examiner has consistently characterized the Silva patent as a rod coupling, suggesting that "it is known that rod couplings and cable couplings are analogous". Aside from the failure of the Examiner to provide any supporting evidence that such couplings are analogous, it is plainly wrong. The Examiner could just as easily assert that it is well known that rod couplings and Chinese finger traps are analogous because the former connects two pipes together in a secure fashion while the latter connects two fingers together in a secure fashion.

The Applicant submits that it would turn neither to cable couplings nor Chinese finger traps to solve the problem to which the Applicant's invention is directed.

Silva's invention may assist in the connection of high voltage cables, but the manner of connection as described in US 4,054,743 to Mayer et al. and US 3,993,387 to Venezia, both incorporated by reference, demonstrate that the chief connection of cables is not done by Silva's invention. As noted by Silva, "The composite housing 10 may be used as a straight splice housing for joining a pair of high voltage electrical cables in the manner more fully described and shown in commonly assigned US 4,054,743" (Col. 2, lines 64-67). In US 4,054,743, the manner of connecting high voltage cables is described as follows (with the housing 30 in that invention corresponding to the housing 10 of Silva's invention):

The component parts of the splice connector 10 include an outer housing 30, a pair of adaptor sleeves 32, an electrical contact element in the form of a metallic ferrule 34 and a heat transfer jacket 36. After preparation of the terminal ends of cables 12 and 14 to expose lengths 24 of shield 20 and lengths 26 of insulation 18 and to bare a portion 28 of each conductor 16, the component parts of the splice connector are assembled as follows.... (Col. 3, lines 5-13)

Once the adaptor sleeves are in place, the terminal portions 28 of the conductors 16 are permanently connected. One method of connection is to insert bared conductor portions 28 into ferrule 34 and permanently affix the ferrule to each conductor, as by crimping the ferrule to establish a connection at 63. Another method is to weld the conductor portions together directly. Other connection methods are known to those skilled in the art.

After the conductor portions are connected as described, the heat transfer jacket is put into place (col. 3, line 64 -col. 4, line 4). Once the heat transfer jacket is in place,

Assembly of the splice connector 10 will be completed to establish the splice connection illustrated in FIG. 2 by pulling the housing 30 over the adaptor sleeves

32 and the heat transfer jacket 36, thus enclosing the connection 63 and jacket 36 within an envelope of insulation" (col. 4, lines 5-10).

Even were rod couplings and cable couplings analogous, which the Applicant denies, Silva is clearly not to be used as described to form the primary connection between two cables. Silva is a component of a cable coupling, not the thing itself.

B. "... according to U.S. practice, patentability relies primarily on structure over function..."

The Examiner reminds the Applicant "that according to U.S. practice, patentability relies primarily on structure over function" (page 4, Paper 7). However, the Examiner has determined Silva to be analogous based solely on its function, rather than its structure. Further demonstrating the Examiner's lack of understanding of Silva is that he refers to it as a coupling of any kind, when in fact, it is merely a component of a coupling, an "electrical connector composite housing", as suggested by the title.

Also, while the Examiner has stated that "the fact that the applicant's invention is intended to be *used* in a different environment is not germane to the question of whether or not applicant's claimed *structure* is disclosed or made obvious by the prior art" (page 4, Paper 7), the Applicant respectfully submits that the *use* is germane to a discussion of the *structure* where the structure of Silva would be utterly incompatible with any possible use of rod couplings. Silva's invention, being formed of elastomeric materials that are then sleeved or slid over a pre-existing connection would be of no use in connecting sucker rods in a rod string together as these would require both a more secure and rigid connection than that offered by Silva's invention, and

altering Silva's choice of materials to more rigid ones would be to read in an overly broad manner what Silva teaches, as well as rendering it unsuitable for its intended purpose.

As such, Silva lacks not only an analogous function to Applicant's invention, but it also lacks an analogous structure. No one in Silva's art, let alone the Applicant's, would use Silva's composite housing on its own to connect anything to anything.

C. "... *an argument for non-analogous art under section 103 applies only between the references used in the rejection, not to one reference compared to applicant's invention...*"

The Examiner also stated that "an argument for non-analogous art under section 103 applies only between the references used in the rejection, not to one reference compared to applicant's invention" (page 5, Paper 7). The Applicant submits that the Examiner is taking too narrow a view of what constitutes non-analogous art, and that such an interpretation would permit an examiner to cite any number of references not remotely close to the applicant's field of endeavor provided they were analogous to each other.

This clearly cannot be right. As noted in *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992) at 1447, "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." The Court was addressing itself to the question of analogous art, and in this context, a reference not within the field of the applicant's endeavor and not reasonably pertinent to the particular problem with which the applicant is concerned can be considered non-analogous.

To suggest that cable couplings are remotely within the field of the applicant's endeavour is to misinterpret Silva's invention completely. Furthermore, Silva's invention is directed to a completely different problem than that of the applicant. The Examiner mis-identifies the problem facing Silva on page 5, Paper 7 when he states, "Silva and Edge are analogous because Edge teaches a process of bonding for a more secure connection between components, which is exactly the problem with which Silva is concerned (col. 5, l. 21-26)." The following lines in Silva more clearly identify the problem.

The resulting joinder of enfolded portion 46 to insert 12 is of suitable strength so as to prevent the enfolded portions from moving or becoming free during any subsequent phase of development (such as molding a conductive outer jacket about composite housing 10) as well as during any phase of actual operation or use of a connector embodying the composite housing 10. (Col. 5, lines 27-34)

The focus in Silva is always the position of the enfolded portions in the insert. The insert most closely corresponds to the tubular housing of the Applicant's invention, but the tubular housing cannot have enfolded ends, no matter how it is interpreted, nor can the "coupling section" of Bair's invention. Furthermore, the Applicant's invention is directed to having a coating on the outside of the tubular housing adhere in a more secure manner. Silva's invention lacks any hint or suggestion that any problems of adhesion exist between the outer insulating jacket 14 and the conductive insert 12. Even if the Examiner had correctly identified the problem facing Silva, it would still not be analogous to Edge for reasons to be discussed below.

The errors in the assertions noted above on their own render the Examiner's rejection of the claims erroneous. A combination of Silva with the other references does not vindicate the rejection because the other references teach away from it.

II. The Rejection of Claims 1, 2 and 4-11 Based on Silva in View of Bair

The Examiner rejects Claims 1, 2, and 4-11 as being unpatentable over Silva in view of Bair. However, the Examiner fails to appreciate that Bair teaches away from Silva, and not only is there no reason or suggestion to combine these references, but there is also no possibility of combining them into anything that would be workable.

Silva's composite housing neither needs thread ends nor could it accommodate them. Silva's invention is intended to be sleeved or slid over electrical cables connected together (col. 3, lines 49-59) by such means as described in US 4,054,743 to Mayer et al. The electrical cables themselves have no threads, and thus there would be no reason for Silva to have such threads. Moreover, Silva emphasizes more than once the importance of having the insert of the composite housing to be relatively void free (col. 4, lines 28-39; col. 5, lines 35-50), the reason for this being described further in US 3,993,387 where the problems of trapped air are described as follows:

One critical factor in the construction of such connector elements and the use of these connector elements in electrical connections is the effect of electrical stresses upon air trapped within the connector of the connection. Because the connectors and the connections are assembled in the field from individual component parts, air can be trapped at locations along the various mating surfaces. Electrical stress across trapped air can cause corona and lead to deleterious

effects upon the integrity of the insulation of the connector element. Any concentration of electrical stress at these locations would have exceptionally deleterious effects. Operation under even higher voltage conditions further aggravates any potential stress concentration problems. (Col. 1, lines 28-43)

Clearly, to provide for threads on the ends of Silva's composite housing when no corresponding threads exist in the connected cables would create a most undesirable situation. As noted in *In re Gordon*, 733 F.2d 900 at 902, "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification".

Absent any teaching, suggestion, or motivation to combine Silva and Bair, no one in the applicant's field of endeavour could be reasonably expected to look to the art of high voltage cable connectors, and the Examiner has not demonstrated any such teaching, suggestion, or motivation. As such, the Examiner has failed to meet the necessity as described by the court in *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992) at 1447 where it noted:

We have reminded ourselves and the PTO that it is necessary to consider "the reality of the circumstances", *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979) -- in other words, common sense -- in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.

It has not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments. The combination of elements from nonanalogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. There must be some reason, suggestion, or motivation found in the prior art

whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself.

The onus is on the Examiner to show that a person of ordinary skill seeking to solve the problem of bonding a coating serving as a guide on a rod coupling would look to the art of high voltage cable connections. The Examiner has completely failed to do so. While Bair is directed to a similar problem as that of the Applicant, it solves that problem in a different way, and would not suggest on its own any need to look for another solution. Silva, on the other hand, is directed to a completely different problem, as noted previously.

This should be sufficient to overcome the rejections of claims 1, 2, and 4-11. However, the Applicant would also like to point out that in rejecting claim 7, the Examiner has failed to apply the relevant case law in the correct manner. The Examiner noted that "Applicant is reminded that duplicating the components of a prior art device is a design consideration within the skill of the art. *In re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960)" (page 3, Paper 7). What the Court actually said in that case at 774 was that "[it] is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced...." The claims to which the quote refers were rejected because the only difference between them and the single prior art reference relied upon by the Board of Appeals was the duplication of a ribbed structure described in the prior art reference, which for all intents and purposes, anticipated the rejected claims aside from the duplication. However, in the same case, the court allowed a duplication of a ribbed structure in a different configuration because it produced new and unobvious results (ibid at 775).

As has been shown, the Examiner cannot rely on *In re Harza* because the Applicant's invention yields new and unexpected results. If the rod couplings of claim 1 are new and unobvious, then the duplication of those rod couplings as described in claim 7 is also permissible and not a mere design choice, as suggested by the Examiner.

III. The Rejection of Claims 3 and 12 Based on Silva in View of Bair and Further in View of Edge

As has been previously noted, the combination of Silva with Bair is unmotivated and completely erroneous. To reject claims 3 and 12 based on their further combination with Edge is therefore also completely erroneous. However, for much the same reasons as those described above, Silva not only would not be combined with Edge but cannot be combined with Edge.

For one, Silva has no ability to form knobs on its inner surface because "the insert which appears substantially as shown in FIG. 6 is placed on a second mandrel and the outer jacket of insulating material is molded thereabout in a conventional manner" (col. 5, lines 13-17). As the material fills the holes shown in the insert, it is prevented from going beyond the inner edge of the insert by the mandrel on which the insert is placed. Moreover, the undesirability of such knobs has already been discussed above in the context of avoiding trapped air at all costs. If such knobs were present in Silva's composite housing, it would no longer be suitable for its intended purpose.

Aside from the complete lack of analogy between the art of high voltage cable connections and that of producing inlaid work, the problem facing Silva, as previously discussed, is not

remotely similar to the problem facing Edge. Edge was seeking to develop a quicker, easier, and more inexpensive way to produce inlaid work. Adhesion of different materials one to the other was not a difficulty contemplated by either Silva or Edge. The Examiner has failed to provide any reasonable explanation why anyone in the field of the applicant's endeavor would look to the art of inlaid work to solve the problem before him. Because of that failure, the Examiner has no basis for rejecting claims 3 and 12.

12. CONCLUSION

For these reasons, it is submitted that the examiner has failed to establish a *prima facie* case of obviousness, and hence has erred with respect to his rejection of all of the claims on appeal. It is therefore submitted that the claims on appeal are in condition for allowance, and that the rejection should be reversed.

Respectfully submitted

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APPENDIX TO APPEAL BRIEF FILED UNDER 37 CFR 1.192

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1. A rod coupling, comprising:
 - a tubular housing having a first end adapted for threaded connection to a rod in a downhole rod string and a second end adapted for threaded connection to a rod in a downhole rod string, the tubular housing having an interior surface defining a bore extending along the tubular housing from the first end to the second end, the tubular housing having an exterior surface;plural openings extending transversely through the housing from the interior surface to the exterior surface; anda coating on the exterior surface of the tubular housing and covering the plural openings.
2. The rod coupling of claim 1 in which the coating extends into the openings.
3. The rod coupling of claim 1 in which the coating extends through the openings to form knobs inside the tubular housing.
4. The rod coupling of claim 1 in which the openings taper from the exterior surface towards the interior surface.
5. The rod coupling of claim 1 in which the openings are distributed uniformly around the tubular housing.
6. The rod coupling of claim 1 in which the openings are distributed in plural rows.
7. A rod string formed of plural rods connected by plural rod couplings, each rod coupling comprising:

a tubular housing having a first end adapted for threaded connection to a rod in a downhole rod string and a second end adapted for threaded connection to a rod in a downhole rod string, the tubular housing having an interior surface defining a bore extending along the tubular housing from the first end to the second end, the tubular housing having an exterior surface;

plural openings extending transversely through the housing from the interior surface to the exterior surface; and

a coating on the exterior surface of the tubular housing and covering the plural openings.

8. The rod string of claim 7 in which the openings taper from the exterior surface towards the interior surface.

9. The rod string of claim 7 in which the openings are distributed uniformly around the tubular housing.

10. The rod string of claim 7 in which the openings are distributed in plural rows.

11. The rod string of claim 7 in which the coating extends into the openings.

12. The rod string of claim 7 in which the coating extends through the openings to form knobs inside the tubular housing.